

Poster code:

M22

Preparation of RF/Brij 58 Mesoporous Carbon Film as Supercapacitor Electrode

Mahanim Sarif @ Mohd Ali^{2, 3}, Zulkarnain Zainal^{1, 2,*}, Mohd Zobir Hussein²
and Mohd Hanif Wahid¹

¹Department of Chemistry, Faculty of Science, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

²Material Synthesis and Characterization Laboratory (MSCL), Institute of Advanced Technology (ITMA), Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

³Forest Product Division, Forest Research Institute Malaysia (FRIM), 52109 Kepong, Selangor, Malaysia

*Corresponding author's e-mail: zulkar@upm.edu.my

Abstract. Mesoporous carbon (MC) film was prepared using carbon precursor of resorcinol and formaldehyde via self-assembly soft templating method for supercapacitor application with high electrochemical performance. A neutral surfactant of Brij 58 was used as structure directing agent for the pore structure geometry tuning while preparing the MCs. It was then carbonized to obtain the ordered mesoporous carbon (OMC) films or namely as RF/Brij58 film. The mesostructure was characterized by X-ray diffraction patterns (XRD) and electrochemical analysis. The carbonized RF/Brij58 film show excellent electrochemical property for supercapacitor application and the specific capacitance up to 10.57 mFcm⁻¹ at 5 mV s⁻¹ scan rate was obtained.

Keywords: mesoporous carbon, soft templating method, supercapacitor, electrode characterization